

Duration: 2 hrs.

Total Marks: 60

- NB:
- 1) Question No.1 is Compulsory.
  - 2) Attempt any THREE Questions out of remaining five questions.
  - 3) Assume suitable data if necessary and justify the same.

- Q.1 Answer any 5 from the following questions 15
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| A. | What is the mechanism of solar energy panel explain in short..   | 3 |
| B. | Why is there a need for renewable energy sources?                | 3 |
| C. | Classify different types of Wind Energy Conversion Systems       | 3 |
| D. | Explain the different forms of energy with suitable examples.    | 3 |
| E. | Discuss agricultural and organic waste as sources of energy.     | 3 |
| F. | Why are non-commercial sources still significant in rural areas? | 3 |
- Q.2 A. Write a detailed note on the Energy Audit process. Discuss with a typical case study of energy consumption. 7
- B. Discuss the various applications of solar energy in domestic, industrial, and agricultural sectors. 8
- Q.3 A. Explain the basic components of a Wind Energy Conversion System (WECS) with a neat block diagram. 7
- B. Differentiate between commercial and non-commercial energy sources with examples. Why are non-commercial sources still significant in rural areas? 8
- Q.4 A. Explain the basic working principle of Ocean Thermal Energy Conversion (OTEC) systems. 7
- B. What is meant by a carbon footprint? Explain its significance in sustainable energy development with an example. 8
- Q.5 A. Discuss the global and Indian energy scenario. Compare India's energy Consumption pattern with that of the world? 7
- B. Describe the process of biogas generation. Discuss the factors affecting biogas yield. 8
- Q.6 A. Describe the types, applications, and adverse effects of coal as a conventional energy source 7
- B. Explain oil and natural gas as energy sources. Discuss their importance in the present energy mix and their environmental impacts 8

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